Marking OUR PROGRESS

Research is a never-ending process, in which each answer leads us to a new set of questions. Our discoveries, however, also serve as milestones in the ongoing pursuit of excellence in health care.

As they have throughout the history of our program, VA researchers in 2002 made many significant contributions to the advancement of medical science. A more extensive account of VA research milestones is available on the VA Research and Development website at www.va.gov/resdev. Selected highlights of last year s achievements follow:

- Patients with ***osteoarthritis*** of the knee who underwent mock arthroscopic surgery were just as likely to report pain relief as those who received the real procedure, according to a VA study published in the *New England Journal of Medicine.* The results challenge the usefulness of a common medical procedure on which Americans spend more than $3 billion each year. Following this study, VA stopped performing such unnecessary surgeries for osteoarthritis.

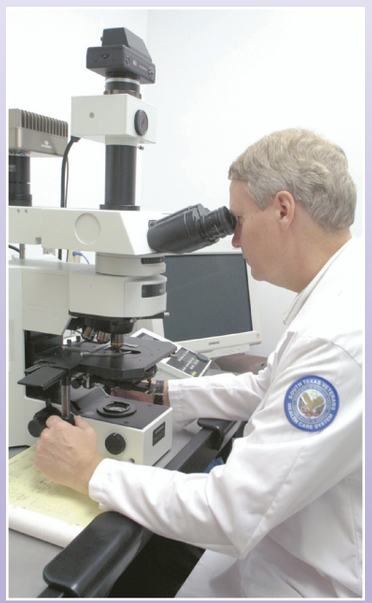
- The nation s Medicare system could save as much as $142 million annually by changing the way doctors administer the drug epoetin, used to boost the red blood count of patients with end-stage ***kidney disease***. In a study at 24 VA hospitals and published in the *American Journal of Medicine*, VA researchers and colleagues found that by delivering epoetin under the skin rather than intravenously, doctors could safely achieve the same benefits with substantially lower doses. Since the drug is expensive, this could represent millions of dollars in savings each year for Medicare or other health systems. VA hospitals have already begun using the subcutaneous method for most patients, but the majority of patients elsewhere still receive the drug intravenously.

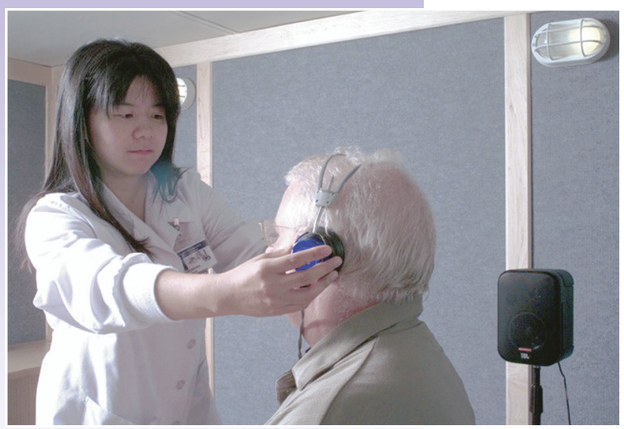
- VA researchers are part of a team that developed an oral drug that halts the deadly action of ***smallpox*** and related viruses in lab tissue-culture cells and mice. The drug is now undergoing evaluation for use in humans. Researchers announced their discovery at the 15th International Conference on Antiviral Research in Prague, Czech Republic.

- Another team of VA scientists developed a model for a ***smallpox vaccination program***. Utilizing historical accounts of smallpox outbreaks and a range of statistical parameters, they illustrated the optimal policy for six variations of possible terrorist attacks using the virus. Writing in *The New England Journal of Medicine*, they endorsed vaccination of all eligible health care workers and first responders prior to an attack but said they would advocate mass vaccination only if the likelihood of large-scale attacks increased substantially.

- A VA study published in the *Journal of the American Medical Association* found that only the observational skills of physicians asking the right questions can ensure a reliable diagnosis of ***depression***. Researchers found that progressively more specific questions are effective in determining the risk of major depression, a condition that goes undetected in one-third to one-half of cases.

VA Research Makes Significant Contributions to Advancing Medical Science





We are Establishing New Standards of Clinical Care

■ VA researchers are establishing new standards of clinical care for ***tinnitus***, the ringing in the ears that affects more than 162,000 veterans and carries more than $172 million in treatment costs each year. They are developing computer-automated techniques that measure loudness and pitch reliably and studying the effectiveness of two methods of treating tinnitus. Results of their research appear in the *Journal of the American Academy of Audiology*.

■ In a trial of nearly 1,600 patients in the United States and Europe, a 15-minute blood test enabled emergency-room doctors to correctly diagnose ***congestive heart failure*** in 90 percent of cases without relying on costly, time-consuming tests such as echocardiograms and chest X-rays. The study, led by a VA cardiologist, appeared in the *New England Journal of Medicine*. The test, already in use in some hospitals, detects elevated levels in the blood of a hormone that is released in a failing heart. Congestive heart failure affects nearly 5 million Americans, with more than 500,000 new cases each year.

■ ***Aneurysms***, blood-filled bulges in blood vessels, can be deadly if they rupture. A VA study found it is better not to repair smaller aneurysms in the abdominal aorta through surgery. The hazards of surgery can be the greater threat unless the aneurysm is larger than 5.5 centimeters in diameter, according to findings published in the *New England Journal of Medicine*.

■ Early research results show that a combination of Functional Neuromuscular Stimulation (FNS), Body Weight Supported Treadmill Training (BWSTT) and coordination training may help ***chronic stroke*** patients reduce impairment and disability and improve quality of life. FNS uses electrodes to stimulate muscles and help patients relearn movements needed for walking; BWSTT provides support while patients practice walking on treadmills. VA scientists presented their results in February 2002 at VAs Third Rehabilitation Research and Development National Meeting.

■ A special supplement to *Medical Care* included 13 VA studies on ***racial and ethnic*** variations in health care. Most of the studies showed no significant racial variations in access, service provision, or outcomes in VA health care. The issue is particularly important to VA, because the veteran population includes a greater proportion of minorities than the U.S. population as a whole. Researchers will continue to seek innovative strategies to address racial and ethnic variations in outcomes.

■ VA scientists and colleagues have identified a synthetic compound that reverses ***bone loss*** in mice without affecting the reproductive system, as does conventional hormone replacement therapy. Reporting in *Science*, the researchers were the first to demonstrate that synthetic hormones can build bone without harming reproductive organs. The finding may lead to new treatments to prevent osteoporosis for millions of men and women

and lead to safer alternatives to hormone treatments that have recently been shown to present greater risks than previously thought.

■ Medicare pays for therapeutic footwear for thousands of people with ***diabetes*** each year. But VA researchers and colleagues reported in the *Journal of the American Medical Association* that for many patients ordinary good-quality shoes may work just as well to prevent foot ulcers. After two years, ulcer rates were about the same among patients who wore customized shoes or their own footwear. The study did not include patients with special problems who may in fact benefit from custom-made footwear.

■ As it increases emphasis on outpatient care, VA has implemented a system of community-based outpatient clinics. Five studies featured in *Medical Care* found that the clinics: are a valid approach to providing quality ***primary care***; perform as well as parent medical centers on most measures, lower specialty and total costs per patient, decrease use of specialty care services, and exceed medical centers based on patient satisfaction.

■ VA investigators found that a common molecule plays a key role in reducing ***inflammation*** in injured lung tissue. Publishing in *Science*, they found that mice lacking the molecule, which is normally present on the surface of a variety of cells, developed inflammation that persisted until the molecules were restored. Further research may lead to advances in understanding of how the lungs recover from injury.

■ Multi-disciplinary teams produced significant quality-of-life benefits and reductions in physical ailments without increasing costs in comparison with traditional care for the frail and elderly. A study at 11 VA medical centers, published in *The New England Journal of Medicine*, showed that ***Geriatric Evaluation Management*** (GEM) enhanced the physical and mental health of patients in both inpatient and outpatient settings.

■ Gastric bypass surgery seems to achieve long-term ***weight loss*** when other methods fail. The reason for the difference may hinge on a recently discovered appetite-stimulating hormone called ghrelin, according to a VA-led study that appeared in the *New England Journal of Medicine*. The researchers found dieters had much higher levels of ghrelin than patients who underwent bypass surgery. Their results may explain why those who have surgery are generally more successful in maintaining weight loss.

STUDIES SHOW THAT VA IS PROVIDING HIGH QUALITY CARE IN OUTPATIENT CLINICS AS WELL AS IN VA MEDICAL CENTERS